

KIPO's Practices and Challenges on Cleaning and Normalizing Name Data

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Introduction of Applicant Codes in KIPO

❖ Introduction of Applicant Codes in KIPO

- KIPO has internally used 'Applicant Codes' for statistical purpose since 1987, and assigned them to existing applicants ex officio as KIPOnet (KIPO's IT automation system) was developed in 1998.
- Since 1999, KIPO has been issuing 'Applicant Codes' for new applicants by Resident Registration Number or Corporate Registration Number.
- In 2007 and 2009, KIPO cleaned up some multiple codes.
- Since 2009, applicants have only been allowed to use a single applicant name per registered resident number or corporate registration number.
- In 2011, 『Guidelines for Issuing and Managing Applicant Code』 was introduced.
- In 2016, 'Applicant Code' was changed into 'Customer Number' in order to cover all parties who take actions relating IP rights.

Introduction of Applicant Codes in KIPO

❖ Concept of Applicant Code

- A unique number that a party who intends to initiate procedures on patent etc. registers its identification information with KIPO in advance and then is given by KIPO to the party for efficient management of basic information on the IP rights.

❖ Applicant Code System (12 digits)

○ ○○○○ ○○○○○○ ○
Distinguisher Year Serial No. Check digit

<Distinguisher>

1	2	4	5	6	7	8
Domestic corporate	National institution	Domestic natural person	Foreign corporate	Foreign natural person	Non-corporate foundation	Patent attorney

Required Information for Issuance

❖ Common information

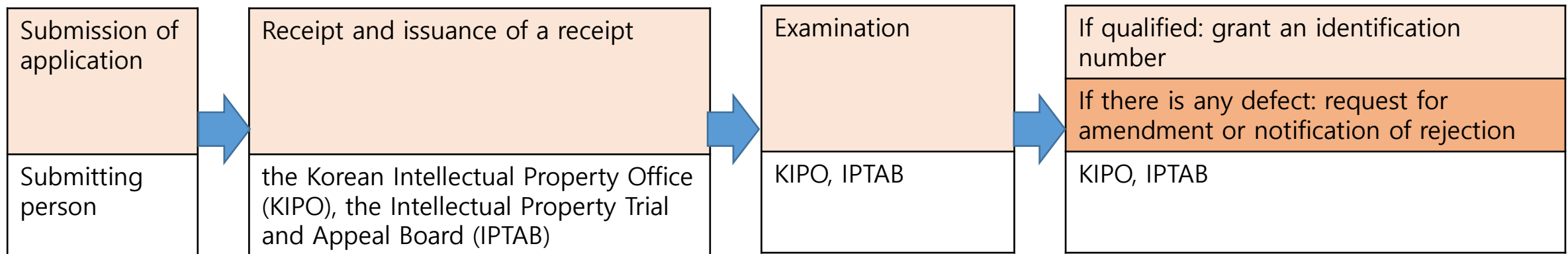
- Name in Korean and English
- Registration number
- Contact: address, telephone number
- Certificates for checking registration number and address

❖ Additional information required of foreign corporate and foreign natural person

- Nationality and Address in English must be submitted

Issuing and Managing Applicant Code (1/2)

❖ Procedure of Issuance



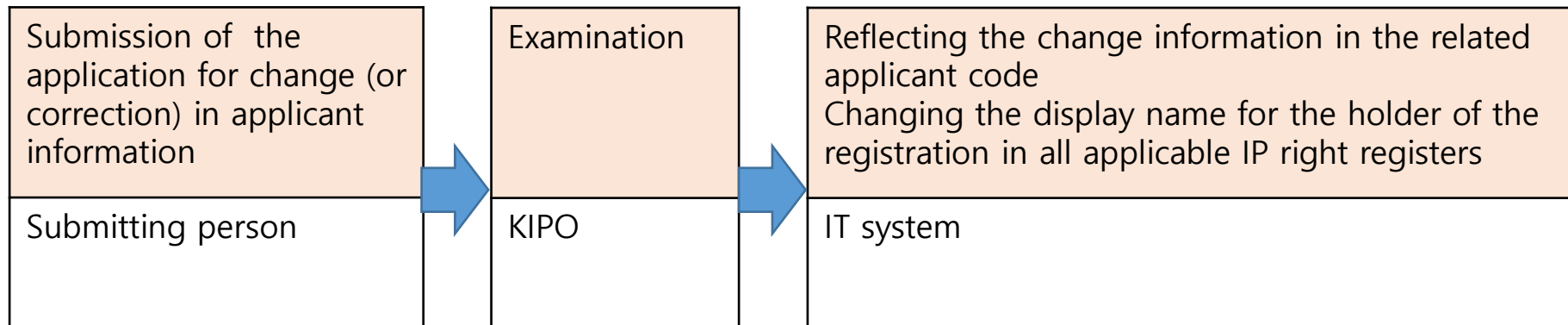
- **Currently, the Applicant Code is Issued to: Domestic corporate, National institution, Domestic natural person, Foreign corporate, Foreign natural person, Non-corporate foundation**

Issuing and Managing Applicant Code (2/2)

❖ Changing or correcting the information related to an applicant code

- When the person who has been granted an applicant code wants to change the information such as name, address, signature or seal, telephone number, etc.
- When the person who has been granted an applicant code wants to correct the applicant code which has been granted more than once or granted with error

❖ Procedure of changing or correcting the information related to an applicant code



Management of the Applicant Code (1/2)

- ❖ **Search method for the same applicant during the examination procedure**
 - If an existing applicant code is found during searching for the same applicant, a notification of rejection would be informed to the submitting person.
 - If any of the information has been changed, it would be notified to submit the application for change in applicant information.
 - **How to search for the same applicant**

Submitting Person	Key words for Search
Domestic natural person	1. Resident registration number, 2. Name, 3. Address
Domestic corporate	1. Corporation registration number, 2. Name, 3. Address
Foreign natural person / corporate	1. Name in English (case-insensitive search, search by word spacing) 2. Address in English (case-insensitive search)
National institution	1. Name, 2. Address, 3. Search by the name before the change after identifying the name change information of the national institution

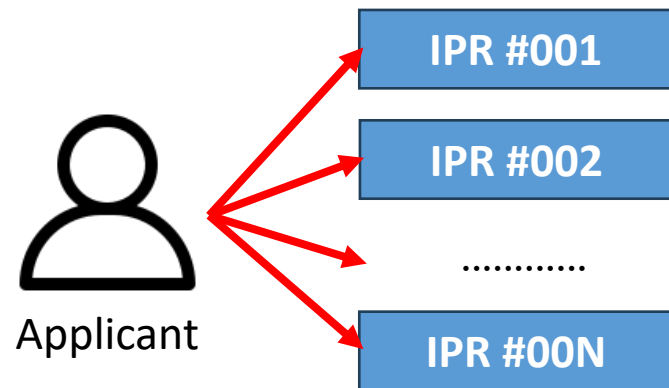
Management of the Applicant Code (2/2)

- ❖ **Management method for the multiple codes for one applicant and incorrectly issued applicant codes**
 - If the person in charge of issuing applicant codes finds out the multiple codes for one applicant or incorrectly issued applicant codes, he/she requests corrections to data management division.
 - **[Related statute] Article 9-5 of the Enforcement Rules of the Patent Act**
 - If an applicant code has been granted twice or granted with error, the Commissioner of KIPO shall correct or cancel the code ex officio. In this case, the Commissioner shall notify the person granted with the applicant code of the fact of such correction or cancellation made ex officio.

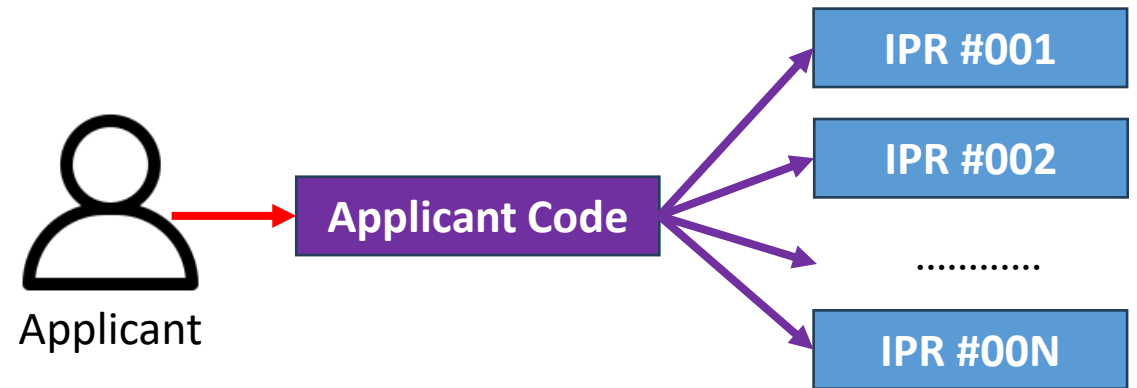
Benefit & Issues (1/2)

❖ Benefit of Applicant Codes System

- Applicant information is effectively managed.
- Applicants avoid inconvenience to input their information repeatedly.
- Applicant information in multiple applications can be managed at a time
- Applicant based IP Statistics based on applicant can be easily produced.



[Without Applicant Code]



[With Applicant Code]

Benefit & Issues (2/2)

❖ Issues of Applicant Codes System

- Multiple Codes for a Single Applicant
- Update Address with the Latest Information
- Managing Information for Foreign Applicants
- Human error
 - Since the introduction of the 『Guidelines for Issuing and Managing Applicant Code』 in 2011, the process of issuing and managing Applicant Codes has been standardized. This ensures that even if the person in charge changes, the work continues to follow the established guidelines.

Managing Multiple Codes (1/2)

❖ Standardization of Applicant Codes in KIPO

- Existing applicants before 1999, however, could have more than one code.
- Samsung Electronics had 23 different applicant codes at the time.
- KIPO cleaned up some (not all) of multiple codes in 2007 and 2009 and applied the mapping table to KIPO's search system.

Applicant Code	Applicant Name	Standardized Applicant Code	Standardized Applicant Name
119981042713	삼성전자주식회사	119981042713	삼성전자주식회사
119952712895	(주)삼성전자		
119952715079	삼성전자주식회사		
119952825346	삼성전자주식회사		
...	...		

- KIPO revised its regulation in 2009 to clearly state that applicants are only allowed to use a single applicant name and applicant code.

Managing Multiple Codes (2/2)

❖ Standardization of Applicant Codes in KIPO

- In 2016, KIPO performed additional intra-office standardization, especially for its foreign applicants.
 - ✓ Applicants' names and addresses are checked manually, after eliminating special character and aligning by ascending order of remaining character.
 - ✓ About 2,000 foreign applicants' names are standardized.
- ➔ The standardization has been completed for the domestic applicants and the foreign applicants with domicile or place of business in the Republic of Korea based on resident registration numbers, corporate registration numbers and foreign registration numbers.

❖ Remaining Difficulties

- Existing applicants before 1999 might still have more than one code even though KIPO cleaned up the multiple codes.
- Even if a display name seems to be a misspelled version of another display name, those two names can represent totally different two entities. (e. g. Samsung vs. Samsong) ➔ This is the reason why KIPO contacted some applicants directly at the final step in the standardization process.

Update Address with the Latest Information

❖ Errors from Invalid Address Data

- Users rarely request updates when their address or contact information changes.
- Outdated address or contact information can prevent users from properly receiving important communications, such as annual fee notices.

➔ These issues undermine the effectiveness of using Applicant Codes.

❖ Approach to Resolving the Issue

- Incentivize applicants to update address information in their Applicant Codes
- Integrate with other administrative agencies to enable automatic address updates with applicant consent

Managing Information for Foreign Applicants

- ❖ **A person with no domicile or place of business in the Republic of Korea**
 - Additional information is needed to uniquely identify a foreign natural person.
 - In this case, KIPO currently uses the name and address in English in order to search for the same applicant.
 - If a foreign natural person changes his/her name and address in English and applies for a new applicant code, then KIPO cannot recognize the sameness between the new information and the existing information.

➔ **KIPO has considered an Algorithm Approach to Standardize Applicant Names**

Algorithm Development for ANS (1/2)

❖ Algorithm Approach to Standardize Applicant Names

- Identifying the Consistency of Applicant Names with Variant Representation

➔ Multiple Algorithms were Applied to the Dataset to Determine the Best Approach

➔ After Evaluating their Performance, Similarity Measurement Algorithm was Chosen

- “Levenshtein Distance Algorithm” was Selected

Levenshtein
Distance
Algorithm

also known as edit distance, is used to measure the similarity between two strings by counting the minimum number of operations required to transform one string into the other (ex. Insertion, Deletion, Substitution of a Character). This algorithm is particularly useful for identifying small differences between applicant name variations, such as typographical errors or alternative spellings.

Algorithm Development for ANS (2/2)

❖ Applicant Data Cleaning Using “Levenshtein Distance Algorithm”

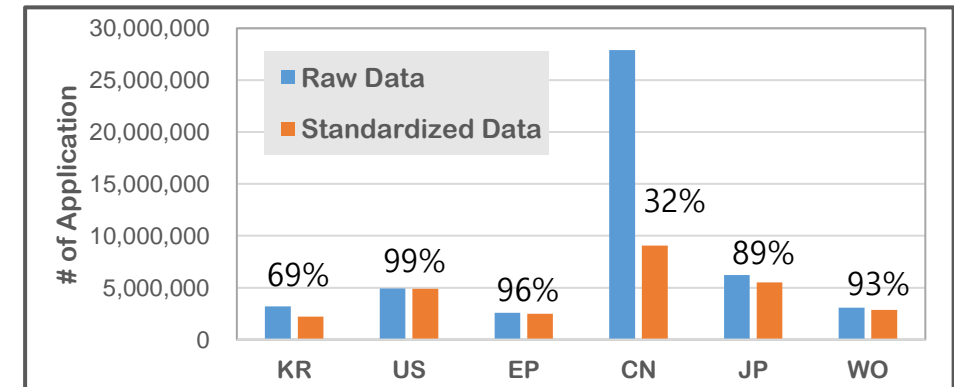
- Building the Database for Applicant Name Cleaning
 - Collecting the Applicant Names in IP5, PCT Publication Data between 2005~2021
 - Applicant Names : 55 million records, Publication Data : 4 million records

❖ Applying “Levenshtein Distance Algorithm” to the Database (Applicant Names)

< Standardization Results (Example) >

Publication Country	Applicant Name	Standardized Name
KR	(주)삼성의료재단	SAMSUNG MEDICAL CENTER
KR	(주)삼성정보통신	SAMSUNG INORMATION & COMMUNICATION
US	BEIJING SAMSUNG TELECOM R&D CENTER	BEIJING SAMSUNG TELECOM R & D CENTER
EP	SAMSUNG SDI BATTERY SYSTEMS GMBH	SAMSUNG SDI BATTERY SYSTEMS GMBH
WO	SAMSUNG PRECISION IND. CO., LTD	SAMSUNG PRECISION INDUSTRIAL CO., LTD
JP	サンソン トータル株式会社	SAMSUNG PETROCHEMICAL CO., LTD.
JP	サムスン バイオエピス カンパニー リミテッド	SAMSUNG BIOEPIS CO., LTD.
CN	北京三星通信技术研究有限公司	SAMSUNG ELECTRONICS CO., LTD.
CN	东莞三星视界有限公司	DONG GUAN SAMSUNG DISPLAY CO., LTD.

< Standardization Ratio >



Thank you!